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NPIC/TSSG/RED-1935-69
21 November 1969

MEMORANDUM FOR THE RECORD

SUBJECT: CCB Meeting 18-20 November 1969

25X1

1. [redacted] mentioned the fact of a source of near east photography we were not aware of--he suggested we check with [redacted]

25X1

2. We're in the color business (all). The pay off from the last take indicates that the optimistic predictions of color utility are probably correct.

3. Army Ground order of battle resolution studies [redacted]
Air Force). Extensive.

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4. MTF/OTF Analyzer [redacted] DDS&T) Advises that camera systems are specified by MTF and offers to make these techniques available to us.

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5. Chip System [redacted] performed a chip study five years ago. Also there were many others monitored thru ISCIG.

25X1

6. Dry Silver [redacted]. Westover has written [redacted] to "stimulate" their delivery of print material--Westover believes foot dragging is going on.

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7. Precise Measurement Study [redacted] NPIC). The need for a PI oriented film distortion study (presumably by [redacted]) was reiterated. [redacted] and the CCB concurred that they would support such a study.

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8. Improved Resolution Target [redacted] He has supported study by [redacted] in this regard and will make a copy available to us.

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9. Color [redacted] has completed a Color Report. Charlie will try to get one for us.

25X1

10. Automatic Target Indexing [redacted] AF). He is interested in a possible add-on order. I gave him [redacted] one year for chinese copy. He is interested in having this capability at [redacted] pointed out that there is a dilemma in the absence of policy for collection program utilization of such a system.

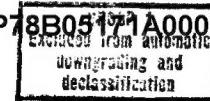
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Declass Review by

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11. Briefing on R&D Program [redacted] 25X1

- a. Color film processors
- b. Color film dryer
 - (1) Microwave
 - (2) Vacuum
- c. Wide Film Color Processor (70mm - 9.5 inch) 100 ft/min called Spectrum Spray Color Processor
- d. [redacted] Two Station Printer
- e. Flat Bed Printers offer a significant advantage?
They are developing one which gives 570 l/mm minimum resolution over the entire frame.
[redacted] described a simple uniform light source for contact printers (B&W and color) developed at [redacted]. He is also convinced that the air gate is a good means for obtaining intimate contact.
- f. [redacted] RS Material
"We conclude that progress to date warrants accelerated development of production capability."

12. Note: The following paragraphs relate to [redacted] briefings given on 19 November 1969. 25X1

13. Color Tutorial Session [redacted] 25X1

- a. Film types
 - (1) Reversal - Acq. or Dup.
 - (2) Negative - Positive Acq. and/or Dup.
 - (3) Mixed - Reversal/Interneg.
- b. Subjective Evaluation necessary. Cannot be overemphasized.
There is no suitable system for objective evaluation of color film performance at this time.
- c. SO 242 is far superior to every other [redacted] color film for our acquisition systems. Further improvements can be made. SO 180 is completely inadequate.
- d. SO 242 Color processing speed is $7\frac{1}{2}$ ft/min.
- e. Best Duping Combination
 - (1) 7271 - interneg
 - (2) 7380 - 3rd stage positive
 - (3) 4 ft/min processing rate
 - (4) 6110/6109 dupe materials at NPIC
- f. Approx. 35X maximum enlargement for original (SO 242) positive
- g. Three objectives of present [redacted] color development program 25X1

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SUBJECT: GCB Meeting 18-20 November 1969

- (1) High Performance Conventional Color acquisition material
- (2) High Performance IR biased acquisition material
- (3) High Performance Color Duping materials
- f. SO 242 may be changed to neg-pos

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[Large rectangular redacted area]

25X1 15. Color Equipment Situation [Redacted Box] 25X1

- a. Processors - Current highest speed $7\frac{1}{2}$ fpm
- b. On Order two 1811 Versamats 4 fpm
- c. Under development MP² SO 242 - 8 fpm; SO 360 - 18 fpm
 - (1) [Redacted] front end, dryer and wind-up
 - (2) 24 processing tanks
 - (3) 18 months away
 - (4) 31-40 feet long
 - (5) First Mod to be at [Redacted]
- d. Color Printers and Enlargers
 - (1) Contact printers 50 fpm (additive vs. subtractive)
 - (2) [Redacted] Breadboard Enlarger
 - (a) additive exposures 5 min.
 - (b) subtractive exposures 1 min.
 - (3) Development
 - (a) Xenon lamps
 - (b) Improved slit condensing system
 - (c) (Problems of diffuse and specular illumination)
 - (d) Proposed Color Enlarger

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SUBJECT: CCB Meeting 18-20 November 1969

- (e) Contact Printer Development Needed
- (f) Basic Knowledge needed
- e. Color Repro Support Equipment
 - (1) Edge flasher for optical titling
 - (2) Densitometer modifications
 - (3) Color Densitometry in general
 - (4) Color Analyzer
 - (5) Color Viewer Study
 - (6) Production Facility to house this effort.

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16. Summary [redacted]

- a. Many changes in store
- b. Many unknowns
- c. Very likely change the SO-242 to a neg-pos process
- d. Must be used to stimulate interest

17. Requested a summary report from [redacted] on this color briefing
to be delivered before Christmas [redacted]

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18. Noted the significance of the chip concept to the advent of
significant quantities of color [redacted]

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19. Requested estimates of comparative costs of Color vs. B&W
[redacted] answered as follows:

- a. Acquisition: 2 to 1
- b. Reproduction: 5 to 1
- (Might be reduced to 3 to 1 by processing SO-242 as a negative)

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20. Silver Discussion [redacted] sees no problem. Many
inactive mines are reopened as silver price goes up [redacted]

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22. PAR 176B [redacted]. Production Oriented Color
Enlarger, [redacted].

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- a. For easing customer duplication
- b. Based on [redacted] printer and the BPE
- c. Light tight housing
- d. Easel rotation
- e. Roll stock reproduction system
- f. Subtractive Illumination System
- g. Rapid Exposure
- h. Simplicity of setting three color numbers the real
secret of production orientation.

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- i. 26 months to develop
- j. 5X and/or 10X enlargement?
- k. 11" x 14" size

22. The resolution (200 l/mm) and diagonal 3.8" product = approx. 18,000 cycles the maximum performance of current operational optical systems--a quasi bandwith figures ()

25X1

23. PAR 175B () Video Color Analyzer.

- a. Color densitometry difficulty.
- b. Based on existing equipment marketed by () but produced by () retail price ()
- c. Modification cost () 23 months.
- d. Kaleidescope () computer program brought up by () as superior to and obviating the Video Color Analyzer.

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24. PAR 177B () Narrow Band Color Viewer

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- a. Based on Beer's law.
- b. Apt. Vincent together with ()
- c. () - suggests getting the review performed.

25. PAR 24-0-8S (). High Altitude Color Acquisition Criteria. (Real Dot Program)

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- a. 350-900 millimicrons
- b. Six Red Dot tests to be scheduled for evaluation of advanced IR emulsion.
- c. Four basic types of soil reflectance.

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(3) [redacted] reports this ink can be obtained in
any color

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30. PAR 157S/RI [redacted] Contact Printing Distortion

- a. New G terrain camera 5" width UTE
- b. Communication channels

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31. PAR 173B [redacted] Automatic Scene
Cameras.

25X1

- a. Evaluation of [redacted] model
- b. Evaluation of [redacted] bench camera
- *c. Check with [redacted] on powerspectrum analysis [redacted]
- d. Objective: To bridge gap between processing and exploitation functions. How? To produce identical test materials for evaluation by different elements of the community.
- e. [redacted] Model--arrange for comparison if possible.

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32. Declaration of Business Transactions [redacted]

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- a. Good color report
- b. PAR 176B. Color-Oriented Production Enlarger. Approved for funding.
- c. PAR 175B Video Color Analyzer. Deferred for further study--demonstrate concept.
- *d. PAR 177S (NPIC). Narrow Band Color Viewer. Deferred pending inputs from NPIC.
- e. PAR 24-0-88. Study of Characteristics, etc. Approved for funding.
- f. PAR 173B. Automatic Scene Camera. Approved for funding.

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33. Next Meeting [redacted] Mid-February on West Coast.

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34. Precise Measurement Study Briefing. [redacted] NPIC/PSG/PHD)

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- a. [redacted] concerned about the utility and coordination of the various mensuration studies.
- b. [redacted] indicated that RED is aware of and accomplishing this coordination.
- c. [redacted] was again reminded of the need for further emulsion distortion analysis specifically related to the short dimensions characteristic of NPIC operations.

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35. Liquid Gate Contact Printing to Remove Artifacts - []
rings, scratches, dirt, etc. [] NPIC/TSSG/APSD).

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- 25X1
- a. Modified [] Printer with Liquid Gate reproduces imagery and removes most of the artifacts normally experienced.
 - b. NPIC is not particularly concerned about the presence of these artifacts.
 - c. These artifacts may cause serious problems on the Automatic Target Indexing Device.

25X1
36. Effects of Dual Gamma Processing on Mensuration (of small images) ([] NPIC/TSSG/RED).

- 25X1
- a. Summarized the [] Draft Final Report on Project 6680 as follows: Study indicates there is not significant difference in mensuration caused by dual gamma processing.
 - b. [] very preliminary evaluation of the study is that it is not conclusive.

25X1
37. Color Image Assessment Briefing. []

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[]
Special Assistant for Plans & Applications,
RED

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NPIC/TSSG/RED [] (24 November 1969)

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